



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

PAYNE et al.

Attorney Docket No: 108347-00014

Application No. 09/926,734

Art Unit: 2872

Filed: March 18, 2002

Examiner: F. Assaf

For: HOLOGRAPHIC DISPLAYS

REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. § 1.111

Commissioner for Patents
Washington, D.C. 20231

March 20, 2003

Sir:

In reply to the Office Action dated December 20, 2002, please consider the following remarks during the prosecution of the above-identified application:

REMARKS

The Office Action dated December 20, 2002 has been received and carefully noted. The above amendments and the following remarks are submitted as a full and complete response thereto. Accordingly, claims 1-11¹ are pending in this application and are submitted for consideration.

Claims 1-12 (*sic*) were rejected under 35 U.S.C. § 102(b)² as being anticipated by Brown et al. (GB 2330471, "Brown"). In making this rejection, the Office Action took the position that Brown discloses all the elements of the claimed invention. However,

¹ It appears that the Examiner has inadvertently examined claims 1-12 as originally filed instead of claims 1-11 annexed to the IPER dated June 19, 2001. Claims 1-11 were submitted with the application as filed as noted in paragraph 10 of the transmittal sheet.

² Because the effective invention date of the present application is June 9, 1999, and the publication date of Brown is April 21, 1999, it appears that the rejection should be under 35 U.S.C. § 102(a).

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Applicants respectfully submit that claims 1-11 (see footnote 1) recite subject matter that is neither disclosed nor suggested in Brown

Claim 1 recites a holographic display including: a source of coherent light. An Electrically Addressable Spatial Light Modulator (EASLM) is in the path of the light source and is arranged to display successively a set of sub-holograms, which together correspond to a holographic image. Light guiding means are arranged to guide modulated light output from the EASLM such that the sub-holograms appear successively in respective tiled regions of an EASLM projection surface. The source of coherent light is arranged to illuminate the EASLM with an angle of incidence which depends upon the spatial position within the hologram of a sub-hologram being displayed. The angle is switched in synchronization with the sub-hologram updated rate of the EASLM.

Claim 9 recites a method of displaying a hologram, the method includes: successively displaying on an Electrically Addressable Spatial Light Modulator (EASLM) a set of sub-holograms, which together correspond to a holographic image; directing coherent light onto the EASLM; guiding modulated light output from the EASLM such that the sub-holograms are displayed successively in respective tiled regions of an EASLM projection surface; illuminating the EASLM with the source of coherent light at an angle of incidence which depends upon the spatial position within the hologram of a sub-hologram being displayed; and switching the angle of synchronization with the sub-hologram update rate of the EASLM.

Claim 10 recites a holographic display including a light source. An Electrically Addressable Spatial Light Modulator (EASLM) is in the path of the light source and is

arranged in use to display successively a set of sub-holograms, which together correspond to a holographic image. Light guiding means are arranged to guide modulated light output from the EASLM such that the sub-holograms are displayed successively in respective tiled regions of an EASLM projection surface. An array of lenses are disposed on the output side of the EASLM projection plane, the lenses of the array being aligned with respective tiled regions.

In making this rejection, the Office Action took the position that Brown discloses all of the elements of the claimed invention. However, it is respectfully submitted that the prior art fails to disclose or suggest the structure of the claimed invention, and therefore, fails to provide the advantages of the present invention. For example, the holographic display of the present invention is configured to include light guiding means arranged to guide modulated light output from the EASLM such that the sub-holograms appear successively in respective tiled regions of an EASLM projection surface. The source of coherent light is arranged to illuminate the EASLM with an angle of incidence which depends upon the spatial position within the hologram of a sub-hologram being displayed, the angle being switched in synchronization with the sub-hologram updated rate of the EASLM.

As a result of the claimed configuration, in the present invention the sub-hologram images on the EASLM projection surface produces discreet sets of wavefronts which converge on object points.

Brown discloses a system for producing a holographic image, Brown employs the use of both an electrically addressed liquid crystal modulator 18 and an optically addressed spatial light modulator. As shown in Figure 4 of Brown, the incoherent light

source 16 is modulated by the electrically addressed modulator 18. The modulated light 20 passes through the shutter array 28 and lens array 22 to different parts of the optically addressed spatial light modulator 24 in consecutive time frames.

However, in the present invention, the shutter array is aligned with the lens array in a manner such that the light is transmitted through the shutter to a corresponding region of the electrically addressable spatial light modulator.

Therefore, Applicants submit that Brown fails to disclose or suggest a holographic display where the light guiding means is arranged to guide light output from the electrically addressable spatial light modulator such that sub-holograms are displayed successively in respective tiled regions of the electrically addressable spatial light modulator projection surface, or the method therefor, as recited in claims 1, 9 and 10.

Brown also fails to disclose or suggest a holographic display where the source of coherent light is arranged to illuminate the EASLM with an angle of incidence which depends upon the spatial position within the hologram of a sub-hologram being displayed, the angle being switched in synchronization with the sub-hologram updated rate of the EASLM, as further recited in claim 1.

Thus, it is respectfully submitted that the Applicants' invention, as set forth in claims 1, 9 and 10 is not anticipated within the meaning of 35 U.S.C. § 102.

As claims 2-9 depend directly or indirectly from claim 1 and claim 11 depends from claim 12, Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least same reasons as discussed above.

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of claims 1-11, and the prompt issuance of a Notice of Allowability are respectfully solicited.

If this application is not in condition for allowance, the Examiner is requested to contact the undersigned at the telephone listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 108347-00014.**

Respectfully submitted,

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